

## Weber's Mudskipper *Periophthalmus weberi*: new record for the Daly River

Helen K. Larson

Museum and Art Gallery of the Northern Territory,  
PO Box 4646, Darwin NT 0801.

Weber's Mudskipper *Periophthalmus weberi* Eggert, 1935, is a little-known mudskipper restricted to northern Australia and Papua New Guinea (Murdy 1989). It is the only species of the genus *Periophthalmus* that is strongly sexually dimorphic in fin shape; males have a large triangular dorsal fin with up to 16 long spines and females have a tiny first dorsal fin consisting of four or five very short spines (Murdy 1989; Larson & Takita 2004). Weber's Mudskipper is known by published records from only a few localities: West Papua (type localities Noord and Lorentz Rivers; Bintuni River), New Guinea (Fly River; Oriomo River) and the Northern Territory (Darwin to Alligator Rivers; Cape Arnhem) (Eggert 1935; Roberts 1978; Murdy 1989; Allen 1991; Allen *et al.* 2002; Hoese & Larson 2006). It should be noted that the distribution map in Allen *et al.* (2002: 281) does not reflect actual records.

There are few specimens of this species in museum collections and limited information about its preferred habitat. Allen (1991: 191) states that "It appears to be restricted to tidal fresh waters in areas of mangrove and nipa palms". The National Museum of Natural History, Washington (USNM), has one specimen obtained by rotenone from freshwater Namboguru Creek, Cape Wom, near Wewak, New Guinea, obtained during the 1979 *Alpha Helix* Moro Expedition. The two Fly River specimens at USNM (also obtained by rotenone) came from a creek, strongly influenced by tides, 236 km up-river from Toro Pass on the lower Fly. The Western Australian Museum (WAM) holds five lots from West Papua (Bintuni River system) and five from Papua New Guinea (Kikori and Oriomo River systems). These fish were collected 20-30 km from the sea, in mud-substrate habitats in mangroves or from fresh water habitats with aquatic plants.

In Queensland, Weber's Mudskipper is so far only known from the Watson River, where a Queensland Museum specimen was collected at the edge of a freshwater pool at the road crossing 30 km east of the Aurukun airstrip.

The earliest known specimens of Weber's Mudskipper from the Northern Territory are two from fresh water at Cahill's Crossing, East Alligator River (collection method unspecified). These are lodged at the American Museum of Natural History, New York and USNM and were collected during the American-Australian Arnhem Land Expedition of 1948, but none of the records of gobioids were published (Taylor 1964;

---

Murdy 1989). The Australian Museum holds a single specimen from the Liverpool River (NT), collected in 1975 by Dan Grace.

From 11-18 June 2007, as part of the collaborative Daly River project "Water regime dependence of fish in the wet-dry tropics", fish survey work was undertaken on the Daly estuary downstream of Mango Farm Resort, using beam trawl, gill nets, hook and line and electrofisher. On 16 June, Brad Pusey, Mark Kennard and I worked in Elizabeth Creek, using a punt fitted with an electrofisher. The creek flows through floodplain on the west side of the Daly, and enters the main river at 13°34.553'S 130°31.129'E. It is freshwater (0.1 parts per thousand salt near the creek mouth), turbid, with many branches, becoming narrower upstream. The rather steep mud banks are lined with overhanging trees, *Pandanus* and other typical riparian vegetation (including tall grass patches) and the substrate is mud with many logs and leaf litter. The electrofisher was deployed along the banks and under logs to a depth of about 0.5 m. Many of the fishes obtained were freshwater species such as Pennyfish *Denariusa australis*, Western Rainbowfish *Melanotaenia australis* and Empire Gudgeon *Hypseleotris compressa*, but also present were estuarine species such as Diamond Mullet *Liza ordensis*, Barramundi *Lates calcarifer* and Bull Shark *Carcharhinus leucas*.

But the find of the trip was that Elizabeth Creek was the habitat for a single species of mudskipper, *Periophthalmus weberi*. Forty-four of them were obtained, mostly upstream of the creek mouth (at about 13°34.860'S 130°30.662'E). Twenty-one were female (34.5-72 mm standard length) and 17 male (36-71 mm standard length).

Specimens were preserved in formalin and absolute ethanol, for the Museum and Art Gallery of the Northern Territory reference collection, and for future DNA studies. Some individuals were photographed alive (photograph on rear cover). As I had never seen this species alive before, the black "racing stripe" exhibited by resting fish was something of a surprise, as this colour feature was known to be characteristic of the genus *Periophthalmodon* (Giant Mudskippers) (Murdy 1989), not *Periophthalmus*. However, Zeehan Jaafar of the National University, Singapore, has since told me that the species Walailak's Mudskipper *Periophthalmus walailakae* can also display a similar marking: "in ... walailakae the bars merge and so forming a "lateral stripe ..." (pers. comm.). The live specimens of Weber's Mudskipper were also the most colourful mudskippers I had ever seen. Allen (1991: 191, 265) described and illustrated the colour of New Guinea specimens, showing that the fins had blue and red markings and fine blue markings were scattered over the head and body. But seeing the living fish was another thing, so it is shown here in colour (photograph on rear cover).

Comparative examination of a small problematic mudskipper collected in 1997 from the now abandoned fish farm at Middle Point, Adelaide River, showed that it too, was a *Periophthalmus weberi*.

## Acknowledgements

My many thanks to Brad Pusey and Mark Kennard (Griffith University), for introducing me to a new method of collecting mudskippers which does not involve getting wet and muddy, a new experience for me. Thanks to Jeff Johnson (QM), Sue Morrison (WAM) and Zeehan Jaafar (NUS) for *Periophthalmus* information, and to Grahame Webb (Crocodylus Park), for reminding me of Dan Grace.

## References

- Allen G.R. (1991) *Field Guide to the Freshwater Fishes of New Guinea*. Christensen Research Institute Publication Number 9, Madang.
- Allen G.R., Midgley S.H. and Allen M. (2002) *Field Guide to the Freshwater Fishes of Australia*. Western Australian Museum, Perth.
- Eggert B. (1935) Beitrag zur Systematik, Biologie und geographischen Verbreitung der Periophthalminae. Ergebnisse einer durch die Notgemeinschaft der Deutschen Wissenschaft ermöglichten Reise nach Niederländisch-Indien der Deutschen Wissenschaft 1929-1930. *Zoologische Jahrbuecher Abteilung fuer Systematik Oekologie und Geographie der Tiere (Jena)* 67, 29-116.
- Hoese D.F. and Larson H.K. (2006) Gobiidae. Gobies. In D.F. Hoese, D.J. Bray, J.R. Paxton and G.R. Allen. *Fishes*. In *Zoological Catalogue of Australia, Volume 35, Parts 1-3*. (eds P.L. Beesley and A. Wells) pp. 1612-1697. ABRS and CSIRO Publishing, Collingwood.
- Larson H.K. and Takita T. (2004) Two new species of *Periophthalmus* (Teleostei: Gobiidae: Oxudercinae) from northern Australia, and a re-diagnosis of *Periophthalmus novaeguineensis*. *The Beagle, Records of the Museums and Art Galleries of the Northern Territory* 20, 175-185.
- Murdy E.O. (1989) A taxonomic revision and cladistic analysis of the oxudercine gobies (Gobiidae: Oxudercinae). *Records of the Australian Museum, Supplement* 11, 1-93.
- Roberts T.R. (1978) An ichthyological survey of the Fly River in Papua New Guinea with descriptions of new species. *Smithsonian Contributions to Zoology* 281, 1-72.
- Taylor W.R. (1964) Fishes of Arnhem Land. In *Records of the American-Australian Scientific Expedition to Arnhem Land*. (ed. C.P. Mountford). Melbourne University Press, Parkville.
-